



OIPE

**RAW SEQUENCE LISTING** DATE: 03/12/2002  
**PATENT APPLICATION:** US/10/024,460 TIME: 09:48:28

Input Set : N:\Crf3\RULE60\10024460.raw  
Output Set: N:\CRF3\03122002\J024460.raw

```

1 <110> APPLICANT: Berry, Alan
2     Burlingame, Richard P.
3     Millis, James R.
4 <120> TITLE OF INVENTION: PROCESS AND MATERIALS FOR PRODUCTION OF GLUCOSAMINE
5 <130> FILE REFERENCE: 3161-18-C1
7 <140> CURRENT APPLICATION NUMBER: 10/024,460
8 <141> CURRENT FILING DATE: 2001-12-17
10 <150> PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 09/115,475
W--> 11 <151> PRIOR FILING DATE: EARLIER FILING DATE: 1998-07-15
13 <150> PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 60/035,494
W--> 14 <151> PRIOR FILING DATE: EARLIER FILING DATE: 1997-01-14
16 <160> NUMBER OF SEQ ID NOS: 31
17 <170> SOFTWARE: PatentIn Ver. 2.0
19 <210> SEQ ID NO: 1
20 <211> LENGTH: 29
21 <212> TYPE: DNA
22 <213> ORGANISM: Artificial Sequence
23 <220> FEATURE:
24 <223> OTHER INFORMATION: Description of Artificial Sequence:primer
25 <400> SEQUENCE: 1
26     cggctccca tgtgtgaaat tttggcgc 29
28 <210> SEQ ID NO: 2
29 <211> LENGTH: 34
30 <212> TYPE: DNA
31 <213> ORGANISM: Artificial Sequence
32 <220> FEATURE:
33 <223> OTHER INFORMATION: Description of Artificial Sequence:primer
34 <400> SEQUENCE: 2
35     ctcttagagcg ttgatattca gtcaattaca aaca 34
37 <210> SEQ ID NO: 3
38 <211> LENGTH: 20
39 <212> TYPE: DNA
40 <213> ORGANISM: Artificial Sequence
41 <220> FEATURE:
42 <223> OTHER INFORMATION: Description of Artificial Sequence:primer
43 <400> SEQUENCE: 3
44     atggatgagc agacgatgg 20
46 <210> SEQ ID NO: 4
47 <211> LENGTH: 19
48 <212> TYPE: DNA
49 <213> ORGANISM: Artificial Sequence
50 <220> FEATURE:
51 <223> OTHER INFORMATION: Description of Artificial Sequence:primer

```

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/10/024,460

DATE: 03/12/2002  
TIME: 09:46:28

Input Set : N:\Crf3\RULE60\10024460.raw  
Output Set: N:\CRF3\03122002\J024460.raw

```

52 <400> SEQUENCE: 4
53      cctcgaggtc gacggatc
55 <210> SEQ ID NO: 5
56 <211> LENGTH: 18
57 <212> TYPE: DNA
58 <213> ORGANISM: Artificial Sequence
59 <220> FEATURE:
60 <223> OTHER INFORMATION: Description of Artificial Sequence:primer
61 <400> SEQUENCE: 5
62      tggatgagca gacgatgg
64 <210> SEQ ID NO: 6
65 <211> LENGTH: 20
66 <212> TYPE: DNA
67 <213> ORGANISM: Artificial Sequence
68 <220> FEATURE:
69 <223> OTHER INFORMATION: Description of Artificial Sequence:primer
70 <400> SEQUENCE: 6
71      tccgtcacag gtattttttt
73 <210> SEQ ID NO: 7
74 <211> LENGTH: 17
75 <212> TYPE: DNA
76 <213> ORGANISM: Artificial Sequence
77 <220> FEATURE:
78 <223> OTHER INFORMATION: Description of Artificial Sequence:primer
79 <400> SEQUENCE: 7
80      agctgcgtgg tgcgtac
82 <210> SEQ ID NO: 8
83 <211> LENGTH: 18
84 <212> TYPE: DNA
85 <213> ORGANISM: Artificial Sequence
86 <220> FEATURE:
87 <223> OTHER INFORMATION: Description of Artificial Sequence:primer
88 <400> SEQUENCE: 8
89      ggaccgtgtt tcagttcg
91 <210> SEQ ID NO: 9
92 <211> LENGTH: 17
93 <212> TYPE: DNA
94 <213> ORGANISM: Artificial Sequence
95 <220> FEATURE:
96 <223> OTHER INFORMATION: Description of Artificial Sequence:primer
97 <400> SEQUENCE: 9
98      gccgtggcga tcagtac
100 <210> SEQ ID NO: 10
101 <211> LENGTH: 17
102 <212> TYPE: DNA
103 <213> ORGANISM: Artificial Sequence
104 <220> FEATURE:
105 <223> OTHER INFORMATION: Description of Artificial Sequence:primer
106 <400> SEQUENCE: 10

```

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/10/024,460

DATE: 03/12/2002  
TIME: 09:48:28

Input Set : N:\Crf3\RULE60\10024460.raw  
Output Set: N:\CRF3\03122002\J024460.raw

107 gccaatcacc agcggac  
 109 <210> SEQ ID NO: 11  
 110 <211> LENGTH: 18  
 111 <212> TYPE: DNA  
 112 <213> ORGANISM: Artificial Sequence  
 113 <220> FEATURE:  
 114 <223> OTHER INFORMATION: Description of Artificial Sequence:primer  
 115 <400> SEQUENCE: 11 17  
 116 atggtttccc gctactgg  
 118 <210> SEQ ID NO: 12  
 119 <211> LENGTH: 18  
 120 <212> TYPE: DNA  
 121 <213> ORGANISM: Artificial Sequence  
 122 <220> FEATURE:  
 123 <223> OTHER INFORMATION: Description of Artificial Sequence:primer  
 124 <400> SEQUENCE: 12 18  
 125 gaaccaaggt aacccagc  
 127 <210> SEQ ID NO: 13  
 128 <211> LENGTH: 7408  
 129 <212> TYPE: DNA  
 130 <213> ORGANISM: Escherichia coli  
 131 <220> FEATURE:  
 132 <221> NAME/KEY: RBS  
 133 <222> LOCATION: (1240)..(1245)  
 134 <220> FEATURE:  
 135 <221> NAME/KEY: promoter  
 136 <222> LOCATION: (1165)..(1181)  
 137 <220> FEATURE:  
 138 <221> NAME/KEY: conflict  
 139 <222> LOCATION: (2509)..(2510)  
 140 <400> SEQUENCE: 13  
 141 gaattgatcc cgtcgttta caacgtcggt actggaaaa ccctggcggtt acccaactta 60  
 142 atcgccttgc aycacatccc ctttcgccta gctggcgtaa tagcgaagag gccccaccg 120  
 143 atcgcccttc ccaacagttg cgcagcctga atggcgaatg gcgctttgcc tggttccgg 180  
 144 caccagaagc ggtgccggaa agctggctgg agtgcgatct tcctgaggcc gataactgtcg 240  
 145 tcgtcccttc aaactggcag atgcacggtt acgatgcgcc catctacacc aacgtaacct 300  
 146 atccattttac ggtcaatccg ccqtttggcc ccacggagaa tccgacgggt tgttactcgc 360  
 147 tcacattttaa tggatgaa agctggctac aggaaggcca gacgcgaaatt attttgatg 420  
 148 gcgttaactc ggcgttcat ctgtggtgca acgggcgtg ggtcggttac ggccaggaca 480  
 149 gtcgtttgcc gtctgaattt gacctgagcg cattttacg cgccggagaa aaccgcctcg 540  
 150 cggtgatggt gtcgttgg agtgcacggca gttatctgga agatcaggat atgtggcgga 600  
 151 tqagcggcat ttccgtgac gtctcggttgc tgcataaaacc gactacacaa atcagcgatt 660  
 152 tccatgttgc cactcgctt aatgtatgatt tcagccgcgc tgtactggag gctgaagtgc 720  
 153 agatgtgcgg cgagtttcgt gactacatc gggtaacagt ttctttatgg cagggtgaaa 780  
 154 cgcaggtcgc cagggcacc ggcgtttcg gcggtgaaat tatcgatgag cgtgggtgg 840  
 155 atgcgcgatcg cgtcacacta cgtctgaacg tcgaaaaccc gaaactgtgg agcggcgaaa 900  
 156 tcccgaaatct ctatcggtc gtgggtgaac tgcacaccgc cgacggcacc ctgattgaag 960  
 157 cagaaycctcg cgtatgtcggt ttccgcqagg tgcggattga aaatggtctg ctgctgctga 1020  
 158 acggcaagcc gttgtcgatt cgaggcgta accgtcacga gcatcatct ctgcatqgtc 1080

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/024,460

DATE: 03/12/2002

TIME: 09:48.20

Input Set : N:\CrF3\RULE60\10024460.raw  
Output Set: N:\CRF3\03122002\J024460.raw

159 aggtcatgga tgagcagacg atgggcagg atctccaccg cggggcgcgc cgctctagaaa 1140  
160 ctatggatc tcgatcccg gaaattaata cgactcaacta taggggaaatt gtgagcgat 1200  
161 aacaattccc ctctagaataat aattttgttt aactttaaga aggagatata ccatgtgtgg 1260  
162 aatttggc gcgatcgccg aacgtatgt agcagaatac ttcttgcgg gtttacgtcg 1320  
163 tcttgcatac cgcggatatg actctgcgg tctggccgtt gttgatgcgg aqqtcatat 1380  
164 gacccgcctg ctgcgcctcg gtaaagtcca gatgctggca caggcagcgg aagaacatcc 1440  
165 tctgcatacg ggcactgtt ttqtcacac tcgctggcg acccacgtt aaccttcaga 1500  
166 agtgaatgcg catccgcattt llttgcaca cattgtgtt gtgcataacg gcatcatcg 1560  
167 aaaccatgaa ccgcgcgtt aagagctaaa agcgcgtggc tataccttc tttctgaaac 1620  
168 cgacaccgaa gtgattgcc atctggtaa ctggagctt aaacaaggcg ggactctcg 1680  
169 tgaggccgtt ctgcgtgcta tccccagct acgttctgtt agtccgcgtt tgattggct 1800  
170 ctcgcgtcac ccggatacccg tgctggcgcc ggggatggc gaaaaacttta tcgcctctga ccagctggcg ctgttgcgg tgaccgcgt 1860  
171 ctttatcttc ttgtaaagagg gcgatattgc ggaaatcact cgccgttcgg taaacatctt 1920  
172 cgataaaaact ggcgcggaaat taaaacgtca ggatatcgaa tccaatctgc aatatgacgc 1980  
173 gggcgataaa ggcatttacc gtcaactacat gcagaaaagag atctacgaa acgccaacacyc 2040  
174 gatcaaaaac acccttaccg gacgcatacg ccacggtcg gttgatttaa gcgagctgg 2100  
175 accgaacgc gacgaactgc tgcgtaaagg tgagcatatt cagatcctcg cctgtggta 2160  
176 ttcttataac tccygtatgg tttccgccta cgacgtcgaa atgcgcctcg aatccgccta tcgcaatct gcgcgtgc gtaacagct 2220  
177 gatgatcacc ttgtcacagt ctggcggaaac cgccgatacc ctggctggcc tgctctgtc 2280  
178 gaaagagctg gtttacctt gttcaactggc aatctgttaac gttccgggtt cttctctgtt 2340  
179 gcgcaatcc gatctggcg taatgaccaa cgcgggtaca gaaatggcg tggcatccac 2400  
180 taaagcattt accactcaatg taactgtgt gttgatgctg gtggcgaagc tgcgcgtc 2460  
181 gaaaggctg gatgcctcca ttgaaatcgatca catcgatgc ggtctgcagg cgctgcccag 2520  
182 ccgtatttag cagatgtgt ctcaaggacaa acgcattgaa gcgcgtggcag aagatttctc 2580  
183 tgacaaacat cacgcgtgt tcctggccg 2640  
184 cgcattgaa ttgaaagaga tctttacat tggcgatcag taccgaatcg cgctggaaagg 2700  
185 gaaacacggt ccgcgtggcg taattgtatgc tcacgctgaa gcctacgctg ctggcgaact 2760  
186 caacgaaattt gtttatgttc ttttgtaatg acgatctt tacaccgtt cgcgtcagct 2820  
187 gtttatgttc ttcgcgcgtt aggtgatgc cgtatgccc gttattgtt tgccaccgaa 2880  
188 gtttatgttc ttcgcgcgtt aggtgatgc cattgaagaa gttcgcgcgtt gttcgccgc 2940  
189 gtttatgttc ttcgcgcgtt aggtgatgc cgcgtcagct 3000  
190 gtttatgttc ttcgcgcgtt aggtgatgc caccgacgtt gaccagccgc gtaacctggc 3060  
191 gtttatgttc ttcgcgcgtt aggtgatgc caccgacgtt gaccagccgc gtaacctggc 3120  
192 gtttatgttc ttcgcgcgtt aggtgatgc caccgacgtt gaccagccgc gtaacctggc 3180  
193 gtttatgttc ttcgcgcgtt aggtgatgc caccgacgtt gaccagccgc gtaacctggc 3240  
194 gtttatgttc ttcgcgcgtt aggtgatgc caccgacgtt gaccagccgc gtaacctggc 3300  
195 gtttatgttc ttcgcgcgtt aggtgatgc caccgacgtt gaccagccgc gtaacctggc 3360  
196 gtttatgttc ttcgcgcgtt aggtgatgc caccgacgtt gaccagccgc gtaacctggc 3420  
197 gtttatgttc ttcgcgcgtt aggtgatgc caccgacgtt gaccagccgc gtaacctggc 3480  
198 gtttatgttc ttcgcgcgtt aggtgatgc caccgacgtt gaccagccgc gtaacctggc 3540  
199 gtttatgttc ttcgcgcgtt aggtgatgc caccgacgtt gaccagccgc gtaacctggc 3600  
200 gtttatgttc ttcgcgcgtt aggtgatgc caccgacgtt gaccagccgc gtaacctggc 3660  
201 gtttatgttc ttcgcgcgtt aggtgatgc caccgacgtt gaccagccgc gtaacctggc 3720  
202 gtttatgttc ttcgcgcgtt aggtgatgc caccgacgtt gaccagccgc gtaacctggc 3780  
203 gtttatgttc ttcgcgcgtt aggtgatgc caccgacgtt gaccagccgc gtaacctggc 3840  
204 gtttatgttc ttcgcgcgtt aggtgatgc caccgacgtt gaccagccgc gtaacctggc 3900  
205 gtttatgttc ttcgcgcgtt aggtgatgc caccgacgtt gaccagccgc gtaacctggc 3960  
206 gtttatgttc ttcgcgcgtt aggtgatgc caccgacgtt gaccagccgc gtaacctggc 4020

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/024,460

DATE: 03/12/2002

TIME: 09:46:28

Input Set : N:\Crf3\RULE60\10024460.raw

Output Set: N:\CRF3\03122002\J024460.raw

208 tttcaccagt tttgatttaa acgtggccaa tatggacaac ttcttcgccc cggtttcac 4080  
209 catggcaaa tattatacgc aaggcgacaa ggtgctgatg ccgcggcga ttcaagggtca 4140  
210 tcatgccgtt tgtgatggct tccatgtcgg cagaatgtt aatgaattac aacagtactg 4200  
211 cgatgagtgcc agggcgcccc cgtaattttt ttaaggcagt tatttgtcc cttaaacgccc 4260  
212 tgggtctacy cctgaataaag tgataataaag cggatgaatg gcagaaattc ggacgcqtc 4320  
213 attcgagctc ctgcactgga tggtggcqct ggatggtaag ccgcgtggcaa gcggtaagt 4380  
214 gcctctggat gtgcctccac aaggtaaaca gttgattqaa ctgcctgaac taccgcagcc 4440  
215 ggagagcgcc gggcaactct ggctcacagt acgcylagy caaccgaacg cgaccgcatt 4500  
216 gtcagaagcc gggcacatca ggcctggca gcagttggct ctggcgaaa acctcagtgt 4560  
217 gacgctcccc gccgcgtccc acgcateccc gcatctgacc accagcgaaa tggattttt 4620  
218 catcgagctg ggttaataaage gttggcaatt taaccgcagg tcaggcttc ttacacagat 4680  
219 gtggattggc gataaaaaaac aactgtgtac gccgctgcgc gatcagttca cccgtgcacc 4740  
220 gctggataac gacattggcg taagtgaagc gacccgcatt gaccctaacg cctgggtcga 4800  
221 acgctggaa gccgcggcc attaccaggc cgaagcagcg ttgttgcagt gcacggcaga 4860  
222 tacacttgcgatgtcg tgcattacgac cgctcacgc tgccagcattt aaaaaaaaaac 4920  
223 cttattttatc agccggaaaaa cctaccggat tgatggtagt ggtcaaatgg cgattaccgt 4980  
224 tgatgttgaatg tggcgagcg atacaccgc tccggcggg attggctga actgcacgt 5040  
225 ggcgcaggta gcagagcggg taaactggct cggaltaggg ccgcaagaaa actatccgc 5100  
226 ccgccttact gccgcctgtt ttgaccgcgtt ggtatgcctt ttgtcagaca tgtatacccc 5160  
227 gtacgtcttc cgcagcgaaa acgctctgcg ctgcgggacg cgcaatttg attatggccc 5220  
228 acaccagtgg cgcggcgact tccagttcaa catcgccgc tacagtcaac agcaactgtat 5280  
229 gggaaaccgcg catcgccatc tgctgcacgc ggaagaaggc acatggctga atatcgacgg 5340  
230 tttccatatg cggtgtgaaa taccgcacag atgcgttaagg agaaaaatacc gcatcaggcg 5400  
231 ctcttccgcgt tcctcgctca ctgactcgct ggcctcggtc gttcggctgc ggcgagcggt 5460  
232 atcagctcac tcaaaggcggt taatacgggtt atccacagaaa tcaggggata acgcaggaaa 5520  
233 gaacatgtga gcaaaaaggcc agcaaaaaggc caggaaccgt aaaaaggccg cgttgcgtgc 5580  
234 gttttccat aggctccgccc cccctgacga gcatcacaaa aatcgacgt caagtcaag 5640  
235 gtggcggaaac cgcacaggac tataaagata ccaggcggtt cccctggaa gtcctctcg 5700  
236 gcgcctctctt gttccgaccc tgccgcttac cggataacctg tccgccttc tcccttcggg 5760  
237 aagcgtggcg ctttctcaat gctcacgcgt taggtatctc agttcgggtt aggtcgttcg 5820  
238 ctccaagctg ggctgtgtc acgaacccccc ctttgcggcc gaccgctgcg ctttatccgg 5880  
239 taactatcg ttttgcgttcca acccggttaag acacgactta tcgcactgg cagcagccac 5940  
240 tggtaacagg attagcagag cgaggtatgt aggccgtgtt acagagttct tgaagtgggt 6000  
241 gcctaactac ggctacacta gaaggacagt atttggtatac tgctctgc tgaaggccagt 6060  
242 taccttcgga aaaagagttt gtagcttgcg atccggcaaa caaaccaccg ctggtagcgg 6120  
243 tggttttttt gtttgcgttcc agcagattac ggcgcggaaa aaaggatctc aagaagatcc 6180  
244 tttgatcttt tctacgggtt ctgcacgtca gtggacgaa aactcacgtt aaggattttt 6240  
245 ggtcatgaga ttatcaaaaaa ggatcttac cttagatctt taaaattaaa aatgaagttt 6300  
246 taaatcaatc taaagtat atgagtaaac ttggctgac agttaccaat gcttaatcag 6360  
247 tgaggcacct atctcagcga tctgtcttatt tcgttcatcc atagttgcct gactccccgt 6420  
248 cgtgttagata actacgatac gggagggtt accatctggc cccagtgcgtt caatgatacc 6480  
249 gcgagaccca cgctcaccgg ctccagattt atcagcaata aaccagccag ccggaaaggc 6540  
250 cgagcgccaga agtggctctg caacttttac cgcctccatc cagtcattttt attggtccg 6600  
251 ggaagctaga gtaagttagt ccgcgtttaa tagttgcgc aacgttggttt ccattgttac 6660  
252 aggcatcggtt gtgtcacgtt cgtcgtttgg tatggcttca ttcaagctccg gttcccaacg 6720  
253 atcaaggcga gttacatgtat ccccatgtt gtcggaaaaa gcggttagt ccttcgggtcc 6780  
254 tccgatcggtt gtcagaagta agttggccgc agtggatatac ctcatggtta tggcagcaact 6840  
255 gcataattctt cttactgtca tgccatccgtt aagatgtttt tctgtgactg gtgagtaactc 6900  
256 aaccaaqtca ttctgagaat agtgtatgcg gcgaccgagt tgctctgcg ccggcgtcaat 6960

**VERIFICATION SUMMARY**

PATENT APPLICATION: US/10,024,460

DATE: 03/12/2002

TIME: 09:48:29

Input Set : N:\Crf3\RULE60\10024460.raw

Output Set: N:\CRF3\03122002\J024460.raw

L:11 M:256 W: Invalid Numeric Header Field, Wrong Prior FILING DATE:YYYY-MM-DD

L:14 M:256 W: Invalid Numeric Header Field, Wrong Prior FILING DATE:YYYY-MM-DD